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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,921

09/29/2006

Junichi Takashima

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08/18/2009

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

08/18/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/594,921	Applicant(s) TAKASHIMA ET AL.	
	Examiner Christopher RoDee	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/21/06 9/29/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-7, 9-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,968,705 to Yamada *et al.* in view of JP 11-269204.

Yamada teaches a process for forming a polymerized toner where an aqueous dispersion of polymerized monomer, colorant, and an initiator are formed into droplets that are maintained at a temperature lower than a target polymerization temperature by about 10 to about 40 °C, a step of raising the temperature of the dispersion at the rate of about 1 to about 20 °C an hour to a temperature lower than the target polymerization temperature by about 5 °C, and a step of raising the temperature of the dispersion at the rate of about 3 to about 10 °C an hour to the target polymerization temperature, whereby the polymerizable monomer component is polymerized (Abstract; col. 1, l. 64 – col. 2, l. 11; col. 3, l. 39-43; col. 23, l. 22-28; col. 24, l. 21-34; col. 24, l. 66 – col. 25, l. 19). A dispersant is used in the aqueous medium, which is a metal hydroxide (col. 2, l. 47-57). The dispersion temperature is maintained at a temperature ± 5 °C of the desired temperature when the composition is within 5 °C of the target temperature, and the temperature of a jacket around the reactor is also controlled (col. 25, l. 27-34). The produced toner has a volume average particle diameter of 1 to 20 μm with a dv/dn ratio of not more than 1.7 (col. 25, l. 50-57).

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Example 1 presents a specific formulation where the aqueous dispersion of styrene-containing monomer composition was charged in a polymerization reactor with agitator. The obtained aqueous dispersion of monomer composition was raised from room-temperature to 80 °C at an average rate of 50 °C /hr, from 80 to 85 °C at an average rate of 10 °C /hr, from 85 to 89 °C at an average rate of 7 °C /hr, and was held at the target polymerization temperature of 90 °C. See Figure 1.

Yamada does not disclose the specific of the polymerization reactor, but JP 11-269204 discloses that the inner surface of aqueous phase polymerization containers effectively have a silane polymer coating with a surface roughness (Ra) of 0.3 to 10 µm (¶ [0008]). The container is made of SUS 304, which is a stainless steel (¶ [0014]). Stainless steel is a corrosion resistant metal. This reactor prevents adhesion of material on the side of the reactor tank (¶ [0002]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a stainless steel reactor in the process of Yamada having a inner surface with a roughness within the range of the disclosure, such as 0.3 µm, because the JP '204 document teaches this reactor prevents adhesion of material on the sides of the reactor. Optimization of the surface roughness within the scope of the roughnesses taught by the JP document would have been obvious given the specifically disclosed characteristics disclosed in the JP document. See *Eisai Co. Ltd. v. Dr. Reddy's Labs., Ltd.*, 87 U.S.P.Q.2d 1452 (Fed. Cir. 2008).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,968,705 to Yamada *et al.* in view of JP 11-269204 as applied to claims 1, 2, 4-7, 9-15, and 17 above, and further in view of JP 2003-287928.

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Yamada and JP '204 were discussed above. The references do not disclose spraying of water on the upper interior portion of a reaction container, but the supporting JP '928 document a polymerization process using an aqueous polymerization liquid that is sprayed on the upper interior portion of the polymerization container (¶¶ [0074] – [0078]). This spray process reduces the formation of “scales” on the interior of the container during large scale production of toner (¶ [0010]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to spray aqueous polymerization liquid on the upper interior portion of the polymerization container in Yamada's process because this reduces the formation of scales or deposits of material that can fall into the liquid polymerization composition and destabilize the polymerization process.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,968,705 to Yamada *et al.* in view of JP 11-269204 as applied to claims 1, 2, 4-7, 9-15, and 17 above, and further in view of JP 2003-277405.

Yamada and JP '204 were discussed above. The references do not disclose buff or electrolytic polishing of the interior surface of the metal container to give the desired surface roughness, but JP 2003-277405 discloses that the interior of a polymerization container can be given a desired roughness, such as an R_{max} of 0.5 to 1.2 μm , by polishing (¶¶ [0004] & [0005]). Both buff and electrolytic polishing are disclosed (¶ [0011]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to polish the stainless steel container in Yamada to obtain a surface roughness as taught by JP '204 using buff or electrolytic polishing because the supporting JP

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'405 reference teaches that these techniques are effective to give the desired surface roughness to a polymerization container.

Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,968,705 to Yamada *et al.* in view of JP 11-269204 as applied to claims 1, 2, 4-7, 9-15, and 17 above, and further in view of US Patent 5,958,640 to Hasegawa *et al.*

Yamada and JP '204 were discussed above and those discussions are incorporated here. The references do not disclose the formation of a shell on the toner, but Hasegawa teaches polymerized toner is effectively covered by a shell (Abstract). The polymerizable core composition having a colorant and a polymerizable monomer is polymerized in an aqueous dispersion to form the core particles and then shell polymerizable monomer is added to form the shell (col. 5, l. 50 – 67; col. 14, l. 37-47). The shell gives improved blocking resistance, good fixing ability and uniform melting ability (col. 5, l. 8-37). Useful dispersion agents for the polymerizable aqueous dispersion include metal hydroxides (col. 10, l. 22-56). The toner particles have a volume average diameter of 0.5 to 20 μm and a dv/dp ratio of at most 1.7 (col. 6, l. 33-48). See examples.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to polymerize a shell on the surface of the cores formed in the process of Yamada because Hasegawa teaches that the shell improves the shelf life of the toner (i.e., blocking resistance). This shell can be formed by addition of polymerizable monomer to the aqueous polymerizable composition after formation of the toner particles.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on Monday to Thursday from 6:00 to 4:30 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher RoDee/
Primary Examiner
Art Unit 1795

12 August 2009